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BIOMECHANICAL STUDIES ON NONHUMAN PRIMATES.(U)
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FINAL REPORT

Biomechanical Studies of Nonhuman Primates

by

Peter J. Gerone

Delta Regional Primate Research Center

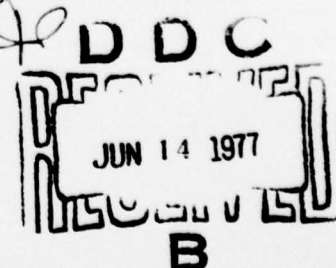
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31 May 1977

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Nonhuman primates were maintained for studies on the biomechanics of acceleration which were performed by Navy personnel in their facilities.		

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Introduction

The broad goal of this program is to examine nonhuman primates as potential models for the analysis of anatomical effects of motion on man. The chimpanzee was initially selected for study because of its close phylogenetic relationship to man and its relatively large total body mass. However, limitations in number of chimpanzees available and the difficulty in housing and manipulating these animals has promoted the use of several other primate species also.

The specific aims of the research are to gather data by photographic, anthropometric, and radiographic techniques that will allow the determination of:

- location of the Center of gravity of the head-neck region
- weight of the head-neck
- principal moments of inertia of the head and neck

These data are basic to the development of mathematical models that would describe the anatomical stresses and trauma resulting from rapid acceleration and deceleration.

Animal Maintenance

The following animals were maintained for all or part of the period described in this report:

- 9 Pan troglodytes (chimpanzees)
- 1 Macaca fascicularis (cynomologus monkey)
- 1 Saimiri sciureus (squirrel monkey)
- 3 Papio papio (baboons)
- 56 Macaca mulatta (rhesus)

Table I lists the numbers, body weights, and dates of assignment and release. A portion of these animals were transferred from Delta Regional Primate Research Center to the Michoud facility during this report period. One animal (chimpanzee #1667) died after transfer from DRPRC.

TABLE I
ANIMAL MAINTENANCE
Contract #N00014-75-C-0361
1 February 1976 - 31 January 1977

<u>Species</u>	<u>Animal #</u>	<u>Sex</u>	<u>Assignment Date</u>	<u>Body Wt.*</u>	<u>Transfer/Release Date</u>
<u>Pan troglodytes</u>	332	M	July 1972	63.75	
	3123	M	26 May 1971	68.0	
	3124	F	26 May 1971	48.75	
	3281	M	10 March 1972	64.0	
	3282	M	10 March 1972	67.0	
	3283	M	10 March 1972	64.0	
	3284	M	10 March 1972	74.0	
	3285	M	10 March 1972	66.5	
	1667	M	July 1972		Perm. transfer 18 Oct.76
<u>Macaca fascicularis</u>	972	M	4 Dec. 1973	9.0	
<u>Saimiri sciureus</u>	3942	F	7 Dec. 1973		13 August 1976 (released)
<u>Papio papio</u>	3456	M	14 July 1972	31.25	
	3457	M	14 July 1972	35.0	
	3455	F	14 July 1972	23.5	
<u>Macaca mulatta</u>	3938	M	6 Dec. 1973		14 July 1976
	3939	M	6 Dec. 1973		14 July 1976
	3940	M	6 Dec. 1973		13 July 1976
	3943	M	11 Dec. 1973		14 July 1976
	3944	M	11 Dec. 1973		13 July 1976
	3946	M	11 Dec. 1973		14 July 1976
	3948	M	11 Dec. 1973		14 July 1976
	3951	M	11 Dec. 1973		14 July 1976
	4090	M	14 Mar. 1974		14 July 1976
	4115	M	19 Mar. 1974		14 July 1976
	4005	F	7 Jan. 1974	6.0	
	4096	M	16 July 1974	8.2	
	4103	M	14 Mar. 1974	7.8	
	4106	M	14 Mar. 1974	10.6	
	4107	M	14 Mar. 1974	9.0	
	4108	M	14 Mar. 1974	8.5	
	4109	M	14 Mar. 1974	12.3	
	4112	M	19 Mar. 1974	9.3	
	4116	M	19 Mar. 1974	12.7	
	4114	M	19 Mar. 1974	9.5	
	4117	M	19 Mar. 1974	10.5	
	4101	M	14 Mar. 1974		13 July 1976
	3888	M	6 Dec. 1973		14 July 1976
	2152	M	1 May 1973		13 July 1976
	2860	M	15 Nov. 1973		13 July 1976
	3149	M	1 May 1973		13 July 1976
	3150	M	1 May 1973		14 July 1976
	3896	M	13 Feb. 1974		14 July 1976
	3922	M	27 Nov. 1973		14 July 1976

<u>Species</u>	<u>Animal #</u>	<u>Sex</u>	<u>Assignment Date</u>	<u>Body Wt.*</u>	<u>Transfer/Release Date</u>
<u>Macaca mulatta</u> (continued)	3924	M	27 Nov. 1973		14 July 1976
	3933	M	5 Dec. 1973		14 July 1976
	3934	M	5 Dec. 1973		13 July 1976
	3936	M	5 Dec. 1973		14 July 1976
	5839	M	28 May 1976		
	5840	M	28 May 1976	7.1	
	5841	M	28 May 1976	7.2	
	5842	M	28 May 1976	8.6	
	5843	M	28 May 1976	11.4	
	5844	M	28 May 1976	8.7	
	5845	M	28 May 1976	10.0	
	5846	M	28 May 1976	9.6	
	5847	M	28 May 1976	8.2	
	5848	M	28 May 1976		
	5849	M	28 May 1976		
	5850	M	28 May 1976	8.8	
	5851	M	28 May 1976	9.3	
	5852	M	28 May 1976	9.0	
	5853	M	28 May 1976	9.5	
	5854	M	28 May 1976	7.9	
	5855	M	28 May 1976	8.6	
	5856	M	28 May 1976	7.5	
	5857	M	28 May 1976		
	5858	M	28 May 1976		
	5859	M	28 May 1976	8.1	
	5860	M	28 May 1976	8.8	
	5861	M	28 May 1976	7.5	

* Expressed in kilograms.